AMENDMENTS TO THE SPECIFICATION

Please amend the following paragraphs of the specification:

Paragraph 0015, Pages 4 and 5

An automatic gain controller 32 may be coupled in the signal lines 24 between the array 16 and FPGA 20 for adjusting brightness and contrast of the pixel stream of images generated by the array 16 prior to being assembled by the FPGA 20. The DSP 28 may be coupled to the controller 32 over signal lines 34 for directing the brightness and contrast settings in the adjustment thereof. However, it is understood that the brightness and contrast settings may be held substantially constant in some applications. In addition, a conventional NTSC encoder 36 may be included in the system 10 to convert the incoming IR radiation images from lines 24 via the FPGA 20 to a format for displaying on a standard display monitor 38 in visible [~~gray scale~~] grey scale images. Still further, system 10 may also include an alarm display 40 with a plurality of alarm lamps 42, for example. The alarm lamps 42 may be lit in combination to provide indications of certain determined states of the system 10. For example, the lamps when lit or not lit in combination may represent the states of: (0) all clear, (1) hot spots or regions present, (2) a smoldering fire detected at a region, (3) a flaming fire detected at a region, and (4) a washout, which states will become more evident from the description found herein below.

Paragraph 0017, Pages 5 and 6

In the present embodiment, characteristics such as the region's average pixel intensity, the number of high intensity pixels making up the region, the location of the region's centroid within the image, and a value representative of the magnitude and frequency of motion within the region are determined with each iteration of frame image processing. The motion value may be based on an analysis of all image frames comprising a predetermined period of time, like one second, for example, which may be on the order of 30 image frames for the present embodiment. Other characteristics of the regions could be determined as well. These characteristics represent [[a]] criteria for determining through analysis whether or not the region represents a fire event and the type of fire event, i.e. smoldering or flaming. More specifically, based on analysis of any of the identified region's determined characteristics, the algorithm will output one of several alarms or states of the system following each iteration. If the determined characteristics of a

region meet certain predetermined criteria, a fire event is determined and an alarm is issued. For example, if one or more of the hot regions are found to be consistently increasing in size and average pixel value, and if their [~~centroids '~~] centroids' locations remain substantially stationary a fire alarm event is indicated.

Paragraph 0019, Pages 6 and 7

The characteristics determined by the algorithm of the present embodiment are indicative of natural characteristics of fire. For example, in general, a typical fire tends to: grow in size as time passes, especially soon after the fire's inception which is the period of time during which detection is most desirable; [~~causes~~] cause increasingly intense infrared radiation to be emitted, with the largest increase occurring soon after the fire begins; [~~stays~~] stay at the location at which it begins; and [~~exhibits~~] exhibit a good deal of motion, especially in the form of flickering if it is a flaming fire. Accordingly, the process of analyzing these characteristics of an identified region and their trends over time, i.e. tracking through subsequent images, is intended to prevent false alarms, that is, alarms that would normally result from identified hot objects or regions other than fires which do not pose the risks generally associated with a fire.

Paragraph 0022, Page 8

Referring to Figure 2B, in block 64, the program checks the identified hot regions of the instant acquired image with the hot regions of a previously acquired image by block 50 for the existence of new regions. Of course, if the instant acquired image is the first image to be acquired in a [~~series then,~~] series, then all of the identified regions [[~~a~~]] would be considered new. Next, in block 66, each of the new regions are assigned an unique index or number which represents its location in the array of the image. Thereafter, in block 68, certain characteristics including the size s(t), the centroid location x(t), y(t), and the average intensity i(t) are calculated for each of the identified regions of the instant image indexed as t. Then, in block 70, the sequential frame images comprising a predetermined period of time are used to calculate a motion value, m(t), for each of the hot regions identified in the instant acquired image. As indicated herein above, the present embodiment uses a frame rate of 30 frames per second. Accordingly, thirty (30) sequentially generated frame images are used for the calculation of the motion value, m(t), in block 70.[[-]]

Paragraph 0024, Pages 8 and 9

In the present embodiment, decisional block 72 determines if the calculated characteristics of size (number of pixels) and intensity (average value of pixels) change between commonly indexed hot spots or regions of the instant acquired image by block 50 [~~with~~] and of an image acquired by block 50 in the previous iteration of the algorithm, and if so, [~~are~~] whether the changes in size and intensity are beyond the thresholds set therefor and then, determines if the centroid locations of the commonly indexed regions between the two images stay within the set boundaries therefor. If [~~this~~] the aforementioned criteria [~~is~~] are not met by any of the identified regions between images acquired by block 50 in sequential program iterations, then a non-fire hot spots state is determined and the representative combination of lamps 42 are lit on display 40 by block 74. Otherwise, at least one region is determined to have met the fire event criteria in block 72 so that program execution continues for the instant iteration at block 76 wherein it is determined if the motion value m(t) calculated by block 70 for each hot spot or region meeting the fire event criteria is greater than the predetermined motion threshold value. If so, the fire event is considered a flaming fire and the representative combination of lamps 42 are lit on the display 40 by block 78. If not, the fire event is considered a smoldering fire and the representative combination of lamps 42 are lit on the display 40 by block 80. After execution of blocks 74, 78 or 80, program execution continues at block 50 to initiate another iteration of the program. In this manner, regions having common indexes in the arrays of subsequently generated images are tracked and their characteristics compared to determine a change in the region that meets predetermined IR radiation fire event criteria. A fire event determination may also be used as a factor to determine whether or not a fire suppressant material should be used to extinguish the fire.